

Lipids - Plasma Lipids

Services

Expand

Total plasma cholesterol and triglyceride are measured by standard enzymatic assays. HDL cholesterol is measured with the enzymatic method after precipitation of VLDL and LDL using dextran sulfate and Mg^{++} . Using these data LDL cholesterol can be calculated using the Friedewald equation, if triglyceride levels are below 400 mg/dl. Investigators may request a total plasma lipid profile or specific plasma lipid measurements.

Free fatty acids are extracted from plasma using heptane/isopropanol. The heptane layer containing FFA is removed, plated on silica gel plates and developed in petroleum ether, ethyl ether, and acetic acid. The FFA band is scraped from the plate and FFA is eluted with heptane /isopropanol. The solvent is removed, and the FFAs are methylated. Methylated fatty acids are analyzed by gas chromatography. Depending on the assay a variety of chromatograph conditions and columns are utilized. A computer identifies each fatty acid peak and can provide data in a number of different ways including quantitation of mass of fatty acid, percent distribution of fatty acids present, quantitation of total lipid in the sample.